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ABSTRACT OF THE DISCLOSURE

A semiconductor device superior in reliability and suitable for microminiaturization is provided. An organic SOG film is formed on a silicon oxide film. Boron ions are implanted into the organic SOG film. By introducing boron ions into the organic SOG film, the organic components in the film are decomposed. Also, the moisture and hydroxyl group included in the film are reduced. After a metal interconnection is embedded in a modified SOG film by the Damascene method, a modified SOG film is formed thereon. Then, contact holes are formed. After a contact hole interconnection is embedded in the contact holes, a modified SOG film and an upper metal interconnection are formed by the Damascene method.